REMARKS

I. Status of the Application

Claims 1-36 are all the claims pending in the Application, with claims 1, 23 and 29-31 being in independent form. Claims 23-28 have been rejected.

The present response addresses each point of objection and rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

II. Allowable Subject Matter

Applicant thanks the Examiner for indicating that claims 1-22 and 29-36 are allowed.

III. Claim Rejections under 35 U.S.C. §102

The Examiner has rejected claims 23-24 and 26-28 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Publication No. 2003/0011894 to Schuster (hereinafter "Schuster"). Applicant respectfully traverses these rejections for *at least* the independent reasons stated below.

According to the MPEP, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (MPEP § 2131). Applicant respectfully submits that claims 23-24 and 26-28 positively recite limitations which are not disclosed (or suggested) by Schuster.

The grounds of rejection allege that Schuster's disclosure that it is advantageous in the refractive partial objective L2' to provide a double asphere on the surfaces 172 and 173 in order to obtain a similarly good wavefront correction within the image field for the second embodiment as the first embodiment, corresponds to the feature of "a correction surface," as recited in claim 23. In an attempt to support this assertion, the Examiner refers to Table 3 of

Schuster, alleging that surfaces 172 and 173 have distinct differences in thickness, radius and alleging that the optical element 172 that is closest to the pupil AS2' has "a correction surface," as claimed. Applicant respectfully disagrees with the grounds of rejection.

Independent claim 23 requires (among other things):

> ...a correction surface being provided on at least one surface... wherein at least one of a surface shape and a refractive index distribution of said correction surface deviates significantly from at least one of a surface shape and a refractive index distribution of a corresponding surface in a basic optical design of the optical imaging system.

In contrast to the requirements of claim 23, Schuster fails to disclose or suggest that the alleged the pupil AS2' has a correction surface, wherein at least one of a surface shape and a refractive index distribution of said correction surface deviates significantly from at least one of a surface shape and a refractive index distribution of a corresponding surface in a basic optical design of the optical imaging system, as claimed. In fact, Schuster discloses nothing more than that the aspheres on the surfaces 172 and 173 comprise the basic optical design of the catadioptric objective disclosed therein.

The MPEP requires that the Examiner must give the claims of the present application their broadest reasonable interpretation. (MPEP §2111.01). Applicants submit that one of ordinary skill in the art would not reasonably interpret the recitation "wherein at least one of a surface shape and a refractive index distribution of said correction surface deviates significantly from at least one of a surface shape and a refractive index distribution of a corresponding surface

in a basic optical design of the optical imaging system, as recited in claim 23, to include the aspheres on the surfaces 172 and 173.

To the contrary, one of ordinary skill in the art would readily discern that "a basic optical design" of an optical imaging system refers to, for example, the design resulting from the calculation of the optics designer to optimize the particular optical system for a specific set of target parameters, such as resolution, etc. Thus, a skilled artisan would recognize that Table 3 of Schuster represents nothing more than the basic optical design for the catadioptric reduction objective disclosed therein. Similarly, a skilled artisan would also recognize that Schuster's aspheres on the surfaces 172 and 173 merely comprise the basic optical design of Schuster's catadioptric reduction objective.

In sharp contrast to Schuster's disclosure, claim 23 requires a correction surface, wherein at least one of a surface shape and a refractive index distribution of said correction surface deviates significantly from at least one of a surface shape and a refractive index distribution of a corresponding surface in a basic optical design of the optical imaging system. Further, as explained in the present specification, for instance, "a correction surface" is quite different from the basic optical design of an optical imaging system. (*See e.g.*, paragraph 04).

Specifically, the surface shape of "design asphere" is defined in the context of the original optical design. (Paragraph 04). That is, a "design asphere" is part of the basic optical design of the optical system resulting from the work of the optics designer.

In contrast, a "correction asphere" is an aspherically curved surface of a lens or of a mirror whose surface shape is specifically used to compensate partially or wholly for fabrication errors in

the basic optical design of an optical system. (Paragraph 04). Considering these significant differences, as explained in the present specification, a skilled artisan would readily discern that the "correction surface" recited in claim 23 is not part of the "basic optical design." To the contrary, the recited "correction surface" results from a post-fabrication modification of a surface to account for fabrication or design errors, for example.

Thus, Applicant submits that one of ordinary skill in the art would readily discern that whereas a "design asphere" (such as the aspheres on the surfaces 172 and 173 as disclosed in Schuster) is part of the basic optical design of the optical system, a "correction asphere" is an additional measure which, for example, compensates partially or wholly for fabrication errors of an optical system. (Paragraph 04). As described with reference to exemplary embodiments of the present invention, for instance, a correction surface is provided, wherein a surface shape of said correction surface deviates significantly from a surface shape in a basic optical design of the optical imaging system. In addition, according to exemplary embodiments of the present invention, a desired correcting effect may be obtained by providing a correction surface, the refractive index distribution of which deviates significantly from a corresponding surface in a basic optical design of the optical imaging system.

For *at least* the reasons presented above, Applicant submits that one of ordinary skill in the art would not reasonably interpret the recitation "wherein at least one of a surface shape and a refractive index distribution of said correction surface deviates significantly from at least one of a surface shape and a refractive index distribution of a corresponding surface in a basic optical design of the optical imaging system, as recited in claim 23, to include the aspheres on the

surfaces 172 and 173, as disclosed in Schuster. Thus, Applicant respectfully submits that independent claim 23 is not anticipated by (i.e. is not readable on) the applied Schuster reference for *at least* these independent reasons. Further, Applicant respectfully submits that the dependent claims 24 and 26-28 are allowable *at least* by virtue of their dependency on claim 23. Thus, Applicant respectfully requests that the Examiner withdraw these rejections.

IV. Claim Rejections under 35 U.S.C. §103

The Examiner has rejected claim 25 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schuster in view of the Non-Patent Literature document entitled "Nanometer-Asphären: Wie Herstellen und Wofür? to Hofmann et al. (hereinafter "Hofmann"). Applicant respectfully traverses these rejections for *at least* the independent reasons stated below.

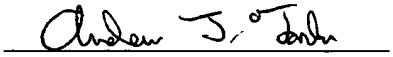
Claim 25 incorporates all the novel and non-obvious recitations of its base claim 23. For *at least* the reasons already discussed above, Schuster fails to teach or suggest all the recitations of claim 23. Moreover, Hofmann fails to remedy the deficient teachings of Schuster. Therefore, Applicant submits that claim 25 is patentable over the cited references *at least* by virtue of its dependency and respectfully requests that the Examiner withdraw this rejection.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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